

WHAT THE ANIMAL MECHANISM MUST BE

— BY —

JOSEPH PASQUET

PROFESSOR OF ANIMAL HUSBANDRY

SCHOOL OF AGRICULTURE

SAINTE-ANNE DE LA POCAIERE, P. Q.

TRANSLATED FROM THE FRENCH

BY

J. J. GAUTREAU, B. S. A.



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WHAT THE ANIMAL MECHANISM MUST BE

Animal husbandry ? This word commonly used in agricultural Colleges is perhaps little known to the outside world. It probably makes you feel a little behind time. But not so. Every farmer is familiar with Animal husbandry. A certain Mr. Jordan made prose uncsciously. And the farmers unconsciously make animal husbandry.

Animal husbandry is a science by which we are taught to breed and exploit animals. You are somewhat animal husbandmen.

I would much rather use the expression "animal industry". 1. because it is more easily understood by all. 2. it gives rise to an interesting idea. The word industry leads us to think of a well organized exploitation, directed by experts, where raw material is transformed into manufactured products by improved machinery. Breeding and exploitation of animals, instead of being done in a half-hearted kind of a way, would gain much in being industrialized.

Our fathers bred animals as they knew how. If we look up the old authors, we learn that in those days animals were kept simply to produce the manure necessary to keep up the soil fertility. According to their expression animals were a "necessary evil".

The economic conditions have now changed. The animal products : meat, milk, butter, eggs, now attain remunerative prices and animals are now a necessary good thing.

Why should we not consider "breeding" as an industry ?

Animals are machineries, living and without doubt, complex machineries.

The different feeds : hay, roots, ensilage, grass, etc. are raw materials of relatively small value, which the animal machinery will transform into manufactured products : milk, eggs, meat, etc. which command a high price and are much looked for on the market.

In animal husbandry, the Holstein cow is a milk-producing manufacture; the little French Canadian cow is a butter-producing manufacture; the Leicester sheep is a wool producing manufacture, and the horse a mechanism for the production of energy.

To give the best returns, what must these mechanisms be ?

This question I will answer in the following lecture.

We shall see that they must be :

- 1.—Well adapted to environment.
 - 2.—Well constructed.
 - 3.—Improved.
-

THE MECHANISM MUST BE ADAPTED
TO ENVIRONMENT

I just said that the animal mechanism must be adapted to environment. What is environment ?

Environment is the sum of natural conditions, in the midst of which, the animal must thrive.

Environment is constituted by the soil, air light, heat, moisture, etc. The action of these conditions upon the animal is in no way negligible.

For example, the soil acts according to its composition, by means of the crops it produces.

The animals raised on sandy lands are small, light, which reduces bone development.

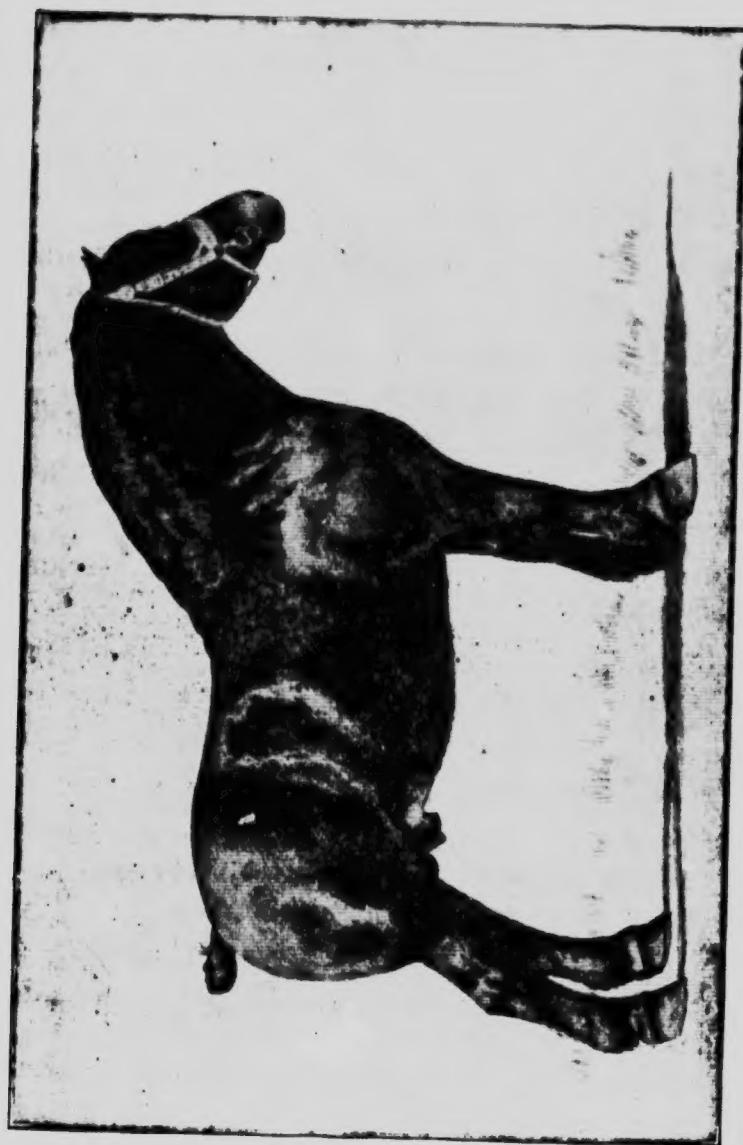
Animals raised on clay soils, on the contrary, are heavy, massif, but rather lymphatic and less nervous.

Those raised on land containing good quality limestone, are strong with a good bone development.

One can modify the nature of the soil and its influence on the animals, to a certain extent, by the use of fertilizers; but this modification is only temporary and of little importance.

As examples of the influence of the soil, I will cite the renowned work horses; such as the Percheron and the Brabançons. Those horses can be raised everywhere, you may say, and there is no doubt of it. But it is also proved that the best belgian horses are raised in a very small square bounded by the cities of Brussels, Nivelles, Ath and Alost.

The percheron horses raised on the chalky hills of Perche are rather sanguinary and lively; those raised in the clay land of Nivernais, are fleshy and rather lymphatic.



BIENFAIT DU MASNUI
Many of his descendants have been imported
in the Province of Quebec

The size of the animal is affected by the dimensions of the territory on which it is raised. To large continents belong large animals; to the small islands belong the small animals. The small Jersey cow belongs to the Channel island of that name.

The horses introduced in the Falkland islands are now so reduced in size that they cannot be mounted.

The climate plays a more important part. Moisture has a nice effect on the production of flesh and especially that of milk. If we look up the history we find that all the good dairy breeds originate from the border of and the islands of the Black sea and the English Channel.

Light is also important on the thrift of the animals.

We will not insist on its indisputable action. But we will take the firm resolution of selecting animals adapted to our own environment.

On poor land we will choose Cheviot or Shropshire sheep, leaving the Oxfords and Leicester to those having rich soils.

In a cold region, we will not try to acclimate the delicate Jersey cow, raised in a mild climate, but will be contented with the more resistant Canadian cow.

Again, let us select animals which are well adapted to climate, soil and other exterior conditions.

THE MECHANISM MUST BE WELL CONSTRUCTED

Each one knows how the animal mechanism is constructed. Our influence in the construction of this living machinery is rather restricted.

Still by making an intelligent use of heredity, one can have the animal constructed almost any way he desires it.

Heredity is a phenomenon, a law by which the offspring resemble the parents. The animal you raise, shall be what the parents were. They shall bear the conformation, aptitudes, the qualities and defects of their parents, but perhaps not to the same extent.

It is therefore important to select rigorously the sire who will head the herd. This is the most important factor in animal breeding, really it is the base.

Remember, there is a large margin in selection.

Individuality is a law by which no two animals are perfectly alike; have same conformation, giving equal returns, equally resistant to disease.

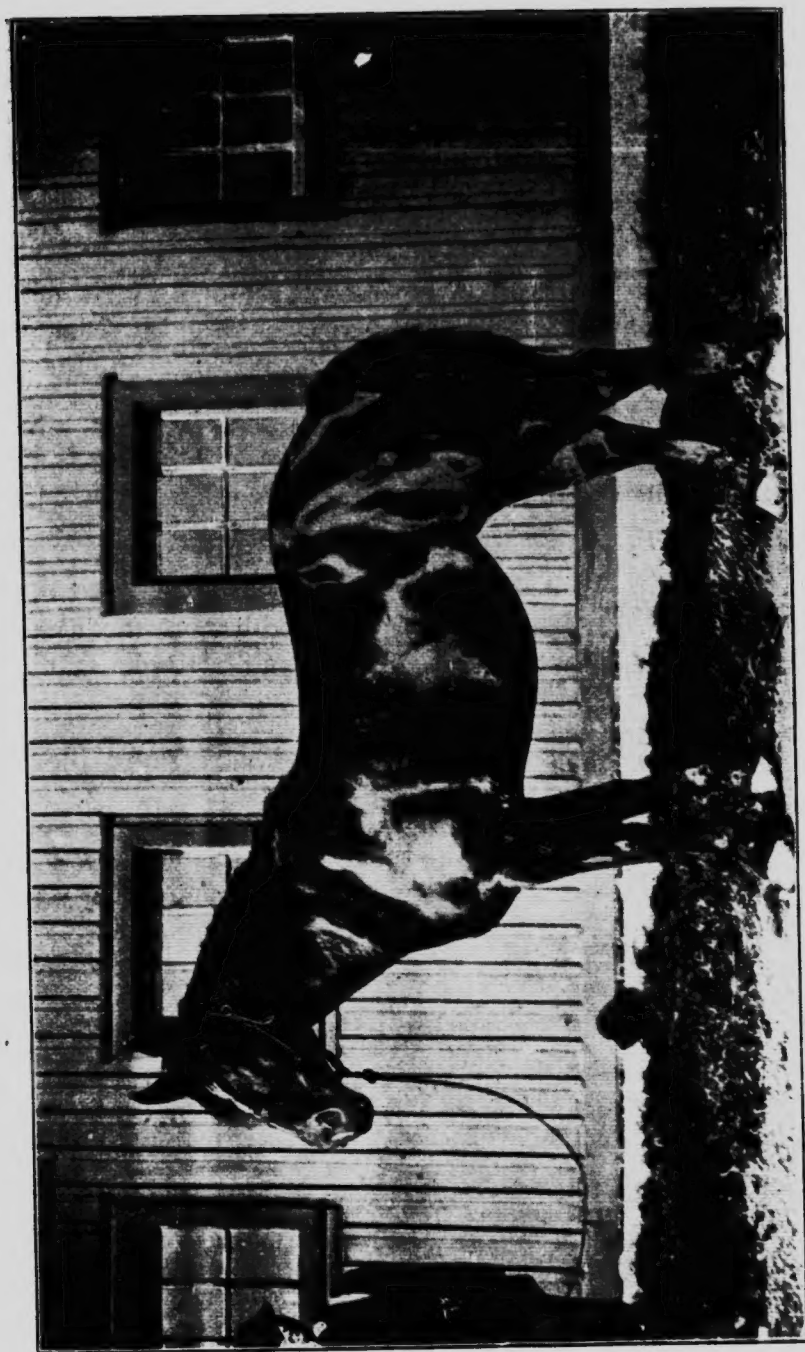
In the Holstein breed, some cows give only 3,000 lbs of milk per year, while others give as much as 30,000 lbs.

Certain horses can trot a mile in 2 mins, while others will take twice that time.

I have had a Rhode Island hen which gave me 190 eggs in a year, and another which only gave 25.

Individuality must receive due consideration and the breeder must use only the remarkable individual, the characters, conformation, and aptitudes of which are those meant to be reproduced.

On this, I insist because it is neglected by the directors of most of the farmer's clubs and Agricultural Societies, who look upon a



Result from good breeding
"JULIA"
Percheron mare, imported, owned by the Experimental Farm
of Ste-Anne de la Pocatière.

pure bred, registered animal as the only important thing. This is not sufficient, for pure breeds can often be undesirable.

The pure-bred sire must also have the conformation looked for in his offspring.

The sire must be selected with particular care, for his influence is as great as that of all the dams.

He is the sire of all the offspring in the herd or flock, while the dams give only one or two offspring in a year. An old breeder once stated that : "the good sire was worth half the flock, but the bad one was worth the whole flock".

Has the sire a pronounced influence in every case ? This is so in the case of hens, the aptitude of laying eggs is inherited from the cockerel.

Prepotency is also probable in the case of the bull which seems to produce offspring of higher milking quality with more facility than does the cow. In regards to other animals and aptitudes, nothing is yet certain.

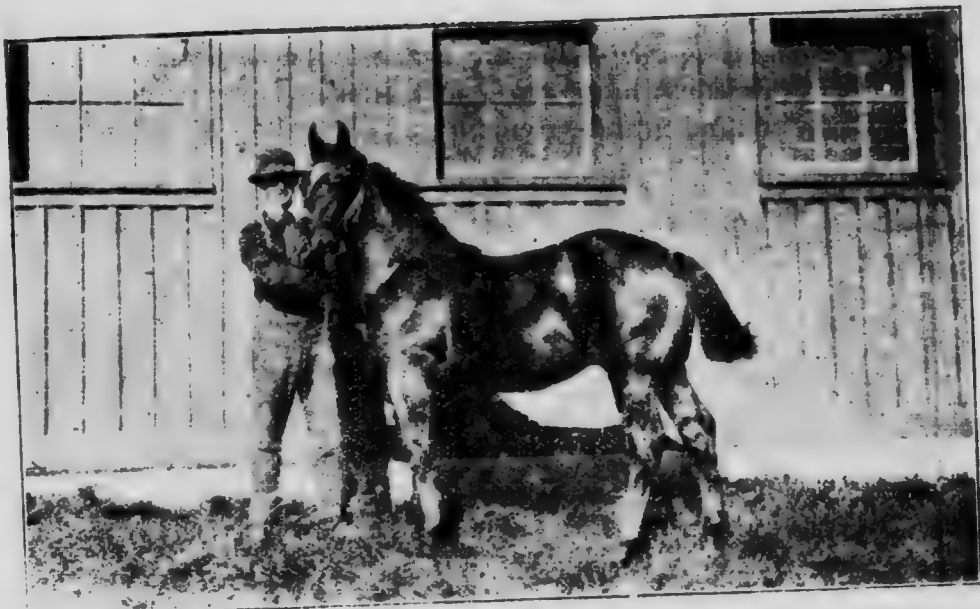
Now, gentlemen, shall the offspring always resemble the sire and dam you have chosen ?

If this were answered in the affirmative, more than one of you would protest and you would be justified in so doing. Because heredity extends farther back than to the sire and dam. There is a form of heredity called atavism, which extends to the ancestors, that is to the grand-parents.

You, who are practical breeders, have no doubt often noticed that your calves, lambs, colts were bearers of characters, peculiarities, defects, qualities which were not to be found in their parents but in the ancestors.

One must not be surprised, atavism is often manifest and often strongly so; it can be more manifest than the heredity of sire and dam.

Atavism must be taken into consideration, for even a good selection is made of the parents, the offspring might not be desirable.



What is obtained with good parents and rational breeding
"CAPITAINE CORMIER"
 Colt issued from Julia. This Photo was taken at 6 months old.
 He weighed then 800 lbs.



Percheron mare and her colt, on the Experimental Farm
 of Ste-Anne de la Pocatière

One must choose in such a way that atavism will pull in the same direction as heredity, using males and females bearing the qualities of the parents and grand-parents.

To be clearer, the parents must be taken from a good line of breeding. Then the paternal and ancestral heredity will have the same pull. And success will be almost certain.

A little story will show the importance of the line or family, of the ancestry.

An English lord, a renowned "jockey of England", used to buy horses at very high prices, his only reference being the Studbook and races won by the parents.

This might be an exaggerated way of doing, but which has its valuable reason of being.

It is the application of the favorite maxim of Torr a celebrated Durham breeder : A good animal, whatever its origine, is a good animal, but its ancestry alone can assure good descendants.

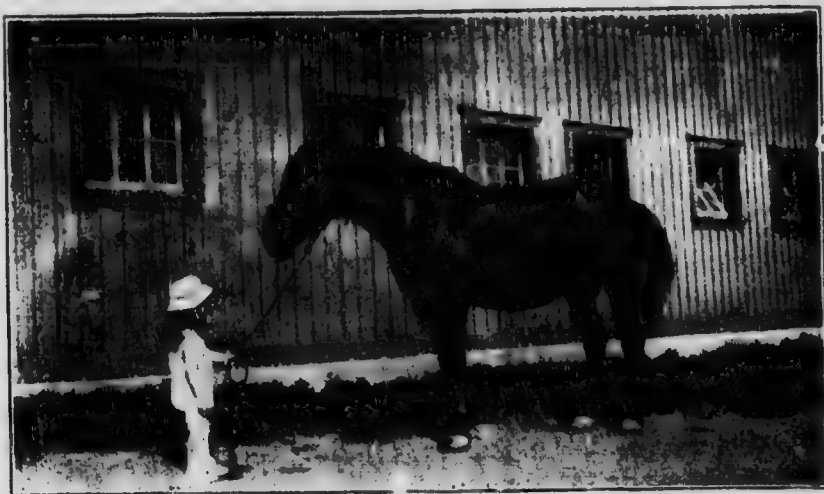
Gentlemen, choose a good animal, from a good line of ancestry.

To answer a question asked me during the short courses, I will say a word on in-breeding, or the breeding together of closely related parents. With all those, who have made experiments of the thing. I Will answer that in-breeding is neither good nor bad. The results can be good or bad according to the way breeding is made. It resembles a double-bitted ax.

In-breeding exaggerates ordinary heredity. If the parents are remarkable, the offspring shall be improved. I could state many facts to back this up; but it will be sufficient to say that the Colling Bros. have improved (one could say created) the great Durham breed, with Hubback, a bull which they used during 15 years on 6 generations of his own daughters.

But have the parents any defects, they also and equally will be exaggerated in the offspring. A blemished filly served by her father being equally blemished, will produce a blemished offspring.

Practically, in breeding should be used only by the experienced breeders, when they have remarkable animals or when they want to hasten the transmission of a quality or character.



A small boy with a big horse.

THE MECHANISM MUST BE IMPROVED BY USE

Steel machinery, once manufactured and put into use, deteriorates every day. They irreparably wear out.

The contrary is true for the animal mechanism, which increases in value during a certain time and can also be improved.

The most excellent method of improvement is by way of use (use and disuse).

All working organs take expansion; all idle organs wither away. Your right hand is more developed than your left. The baker's arms become muscular. The blacksmith's right shoulder is better developed than his left.

This principle has long been applied to animals with great success. By training (by use of the apparatus of locomotion) the race horse has been improved, he can now develop more speed.

It would be too long to explain the methods of training, but following are the results of the american trotters.

Horses trotted one mile

in 2.42 minutes in 1830
in 2.35 minutes in 1840
in 2.28 minutes in 1850
in 2.25 minutes in 1860
in 2.18 minutes in 1870
in 2.14 minutes in 1880
in 2.11 minutes in 1890
in 2.06 minutes in 1900
in 1.58 minutes to-day.

These figures show the efficacious results of use upon the locomotion apparatus. Those obtained by the training of the digestive apparatus are more striking.



DAN PATCH, Champion trotter
Time : 1 mile in 1 min. 55 sec.

With an abundant ration during youth and without interruption in winter (training the animal to eat) the ox, sheep and hogs have undergone great transformation.

Sheep which were once fit to slaughter at 3 years old are now of ample size at 1 year of age. The early maturing animals are as good to eat at 2 years of age as the later maturing ones are at 4 years.

These animals have become closer to the ground; the body has developed and the limbs have shortened. The proportion of meat to live weight has increased. The net weight which was 50 p.c. has now reached 60, 65 p.c. and even 75 p.c. of the live weight. These desirable transformations allow the breeder, a greater production of meat of better quality, with the same capital and labor, but with less feed.

Would it be extravagant to say that the 10, 15, 20 and 30 thousand pound cows are due to the training of the mammary gland (use and disuse) ? The cow in her wild state of life as well as many cows of the beef breeds give just enough milk for their young. It is by repeated, complete milking, during lengthy periods, especially on the young cow that milk production has been increased. For proof we have the Russian milch mares, and the sheep of Larzac in France giving much milk.

Do not forget, to train the mammary glands of a cow freshening for the first time, if you mean to make a high producer.

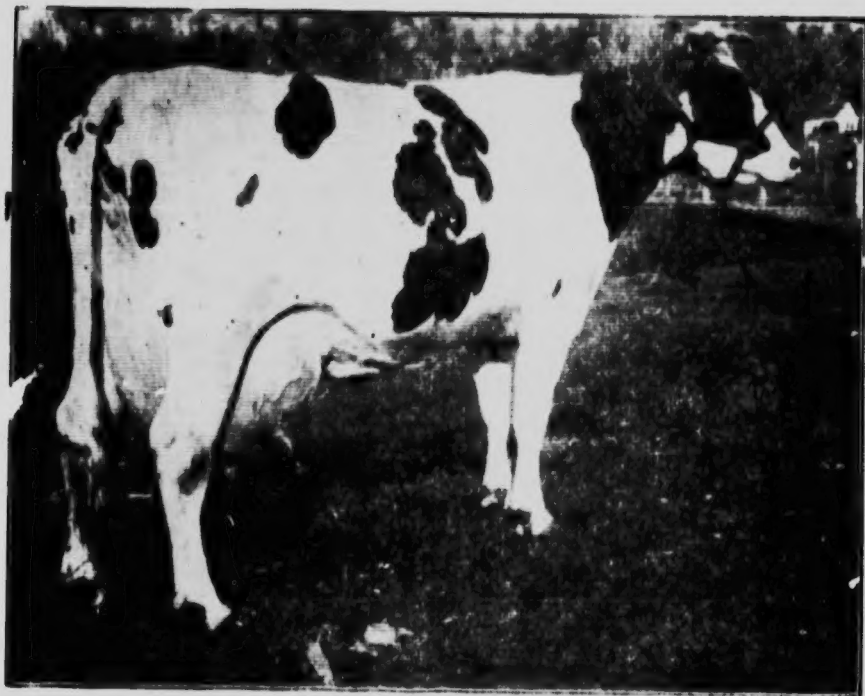
I would be happy, if this little bulletin could decide my readers :

- 1.—To choose a breed well adapted to soil and climate, etc.
 - 2.—To make use only of pure bred animals, of a good conformation, having good aptitudes and from a good line of ancestry.
 - 3.—To improve their animals by training methodically (use and disuse).
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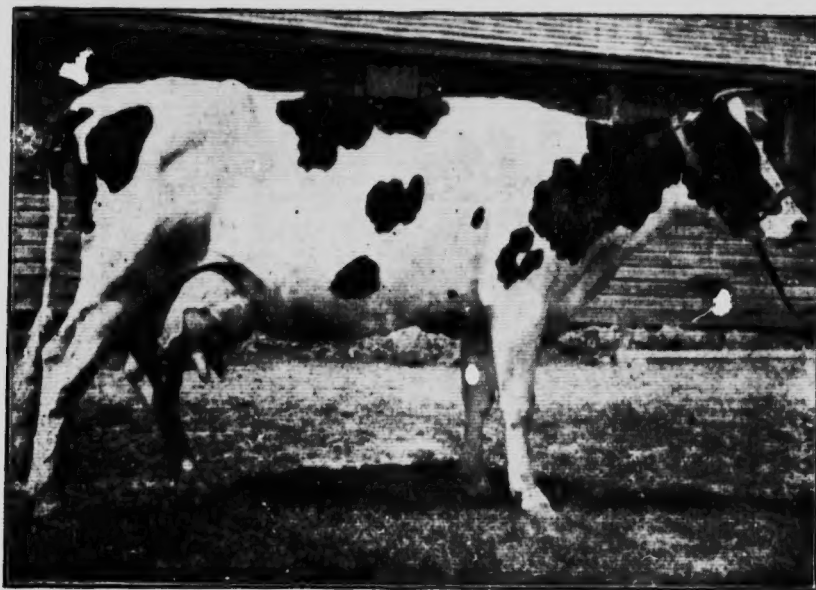
(From the practical Journal
of Agriculture).

DURHAM OX
Result of good breeding methods



MAY ECHO SYLVIA
Holstein Cow. Best Canadian milch cow.
152 lbs in 1 day
1005 lbs in 7 days
4195 lbs in 30 days
12899 lbs in 100 days

By Mr. W.
A. Clemons.



LADY PIETJE CANARY'S JEWEL
Holstein, the highest butter producing 3 years old cow, in Canada
24,149 lbs of milk
1,173 lbs butter in 1 year